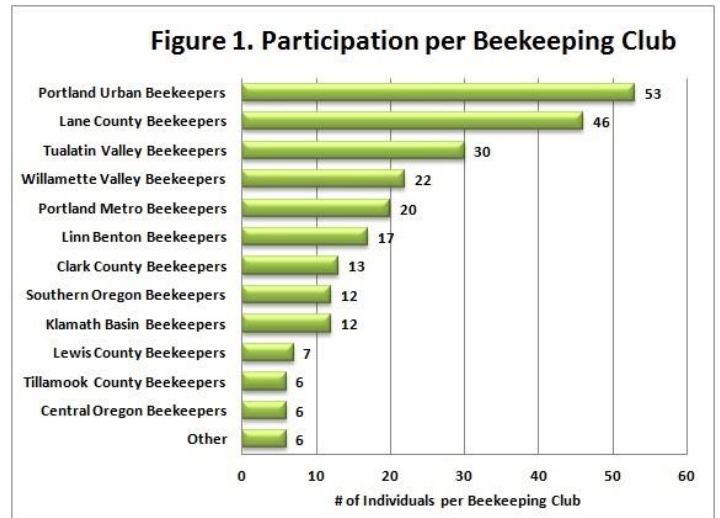


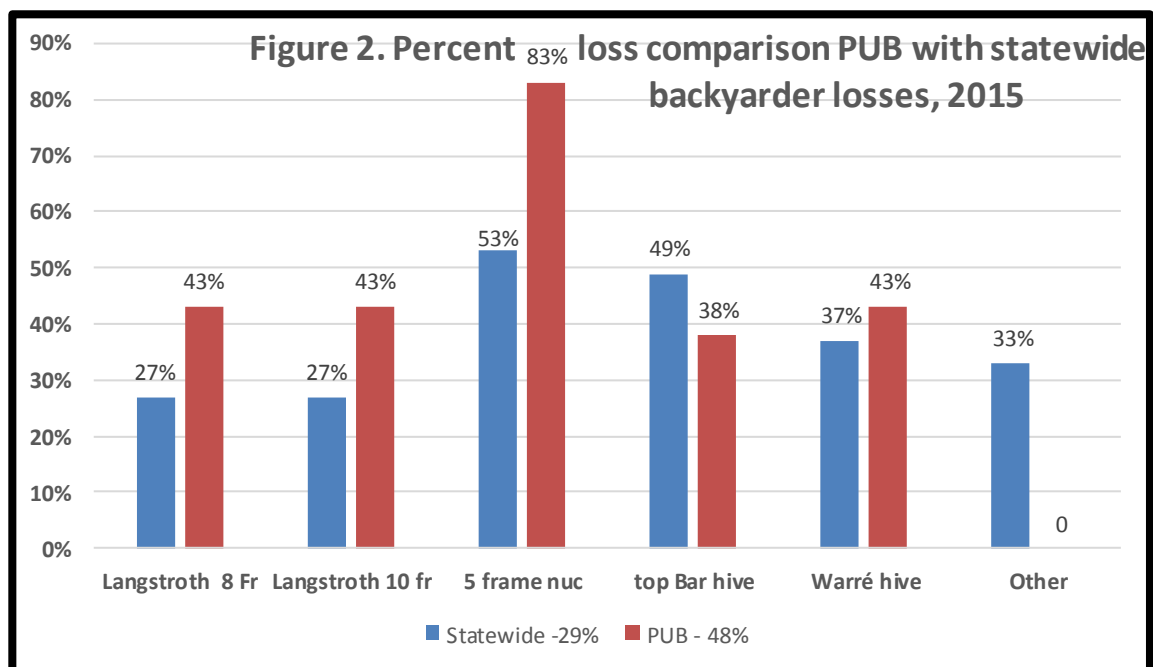
2015 PUB Winter Loss by Dewey M. Caron with statistical assistance of Jenai Fitzpatrick

An electronic PNW honey bee survey instrument was developed within the PUB bee group www.pnwhoneybeesurvey.com and 53 members supplied information on colony overwintering losses/successes and related questions of seasonal managements directed toward keeping bee colonies healthy. This is a continuing effort. This was the 7th year of a continuing survey effort to define overwintering successes (see website for 2014 report).

The PUB member response was the largest of 230 total responses, with 16 additional Clark Co (Brush Prairie) and Lewis Co, WA survey returns. A complete report of the survey responses, both losses and responses to management questions in the survey, in easier to understand graphs, is posted at www.pnwhoneybeesurvey.com Check under survey results (on site top bar) then 2015 survey results – if you have questions and comments please post them to the site and I will get back to you promptly.

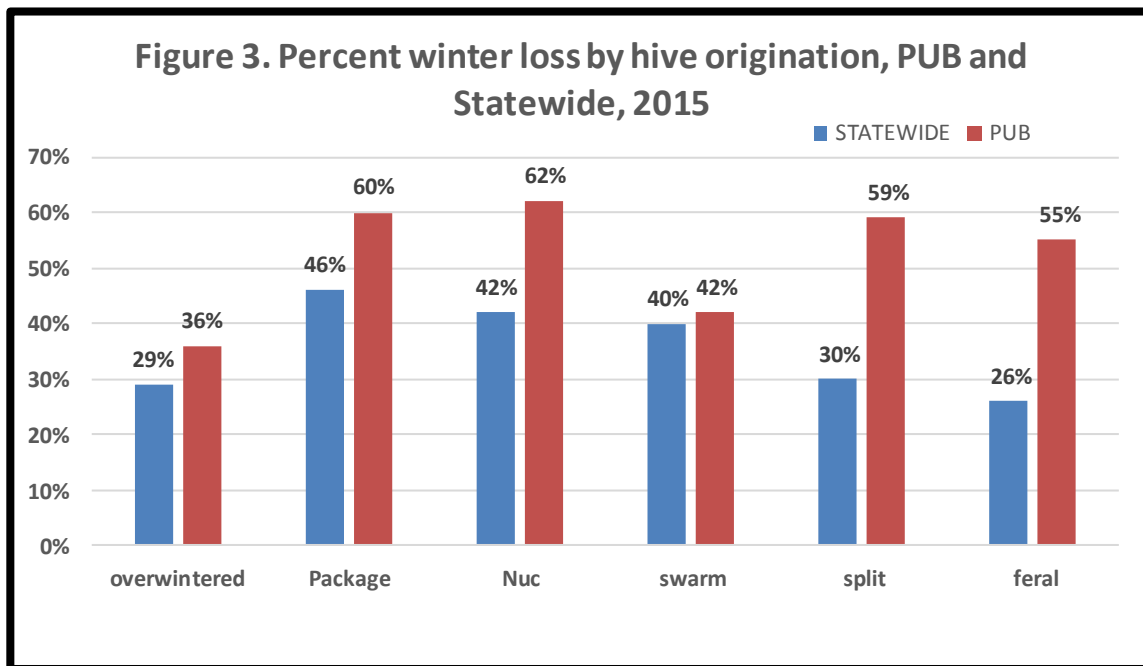


Overwintering losses of PUB respondents was 45%, 33% greater than the statewide loss of 29% (database of 230 OR backyarders.) PUB losses, although large, were 1/3rd lower than the previous year. Overwintering loss rate was determined for 8 and 10 frame Langstroth hives, 5-frame nucs, Top Bar, Warré and a category other hive types. Figure 2 below.



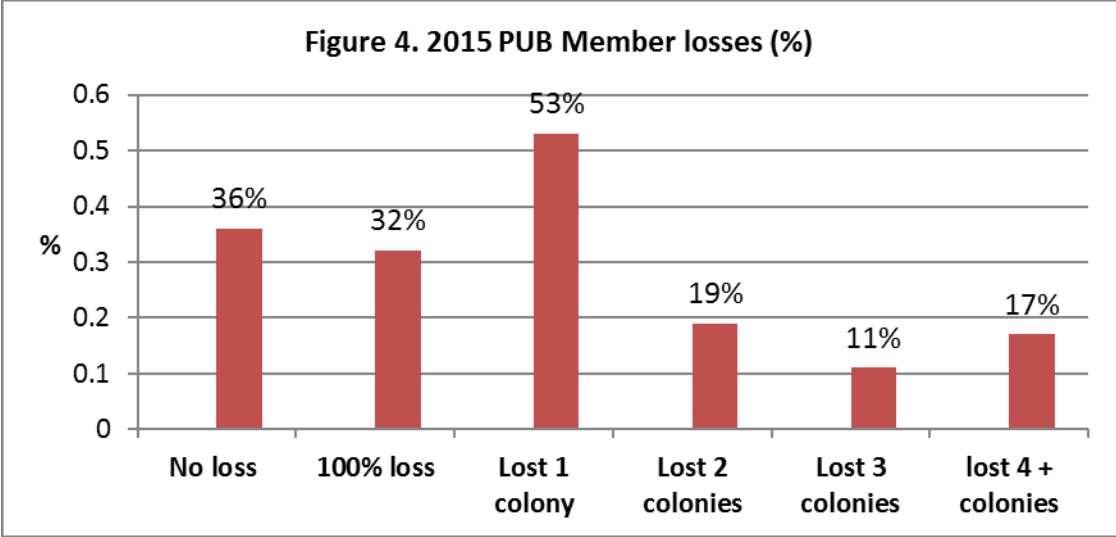
PUB member respondents started winter with 103 Langstroth 10-frame hives and 28 Langstroth 8-frame hives (76% of total), 12 nucs (5-frame), 14 Warré and 16 Top bar hives. Figure 2 shows loss rate of the 5-frame nucs was double the rate of the other hive types, with Langstroth hive loss rate essentially the same as those of Top Bar and Warré hives. PUB losses, although higher, were proportionally similar to overall losses by hive type for the statewide survey results.

The survey also asked for hive loss by hive origination. Forty-three of 67 overwintered PUB member colonies were alive in the spring (36% loss rate), a slightly higher loss rate compared to statewide (29%) overwintering colonies. Respondents reported very high package losses (only 3 of 15 installations survived - 80%), but similar loss levels of nucs, splits and feral hive transfers (55 to 62%). There was a slightly lower loss of swarm hive (43%). See Figure 3.

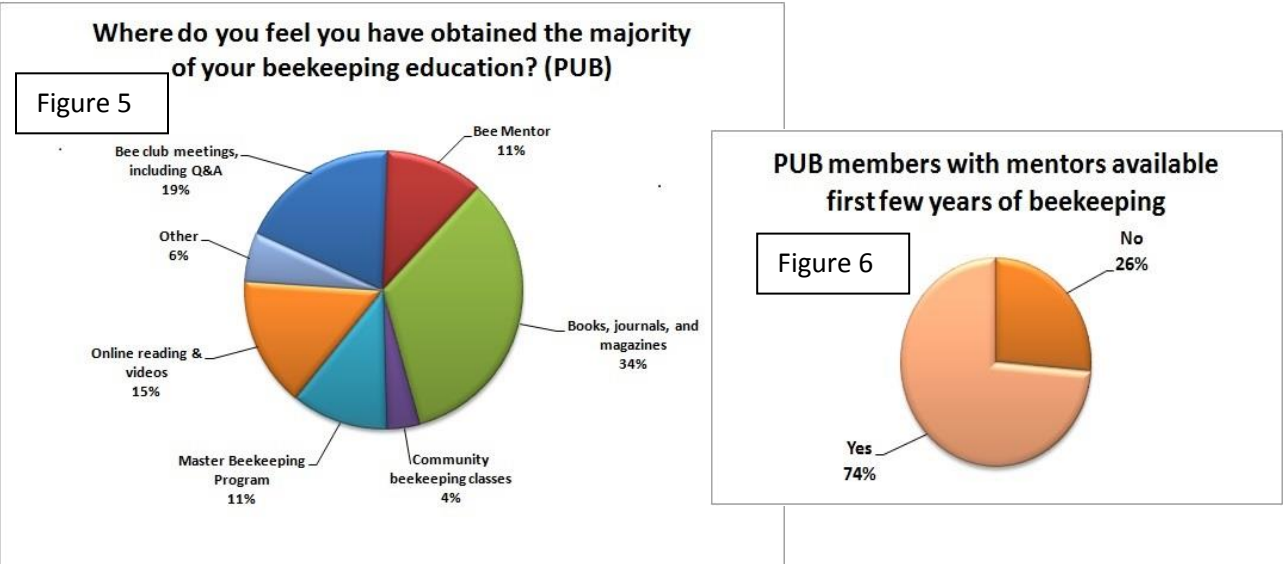


PUB respondents mostly keep 1, 2 or 3 colonies (77%); the largest number was 23. Seven individuals (13%) have more than one apiary location and 7 (13%) said they moved bees during the year; two moved a hive to a friend’s place, two needed to move due to neighbor “issues, one to new residence and one who indicted the primary apiary had too many colonies. One did not offer an explanation.

Not everyone had loss. Nineteen individuals (36%) reported total winter survival compared to 48% statewide; 17 individuals (32%) lost 100% of their colonies. Eighty-three percent (83%) lost 1, 2 or 3 colonies, with heaviest loss 11 colonies. Data shown graphically below in Figure 4. Seventy-two percent indicated acceptable overwinter loss as zero or 5-15%.



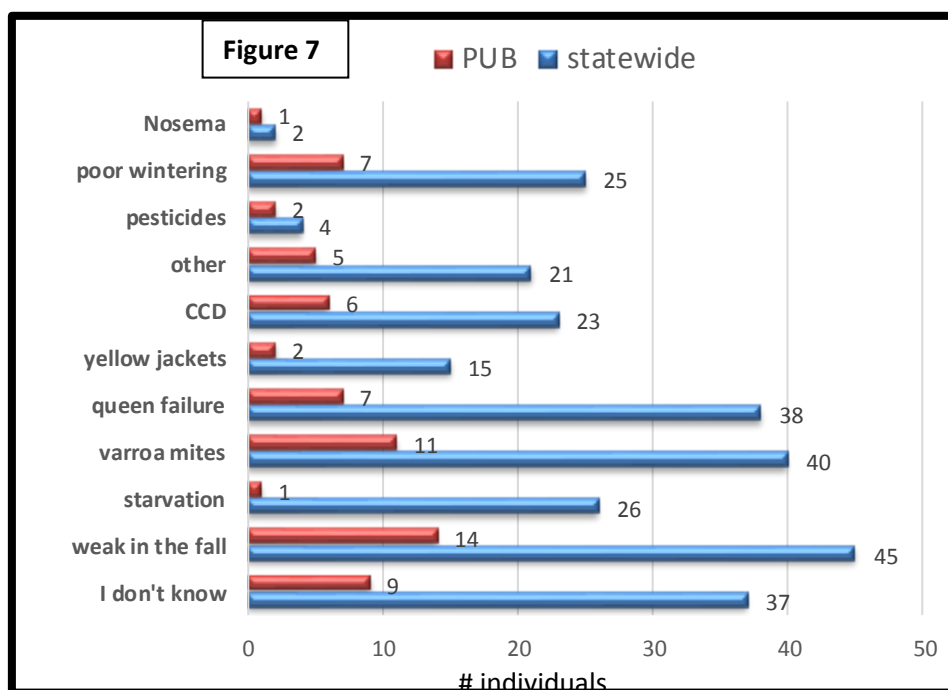
When asked to indicate where the majority of their beekeeping education was received, PUB respondent numbers varied slightly from statewide response. For PUB members, club meetings were listed by 7% fewer (compared to statewide) and 5% fewer listed community beekeeping classes. A greater percentage (12%) said books, journals and magazines were their primary source. This question will be modified for future surveys as respondents indicated it was too difficult to list only one choice.



Bee mentors and the Oregon Master Beekeeper program, for which first year apprentice individuals are assigned a mentor, was the choice of 11-12% by both PUB and stateside respondents. Seventy-four percent (74%) of PUB respondents said they had a mentor available as they were learning beekeeping, slightly greater than the 69% statewide who said they had a mentor. Figure 6

PUB survey respondents reported a range of beekeeping experience. Eight individuals (16%) had 7 years or more of bee experience, with the highest 15 years, while 16 (31%) had 1, or 2 years of experience. Three years experience was the greatest response and the median.

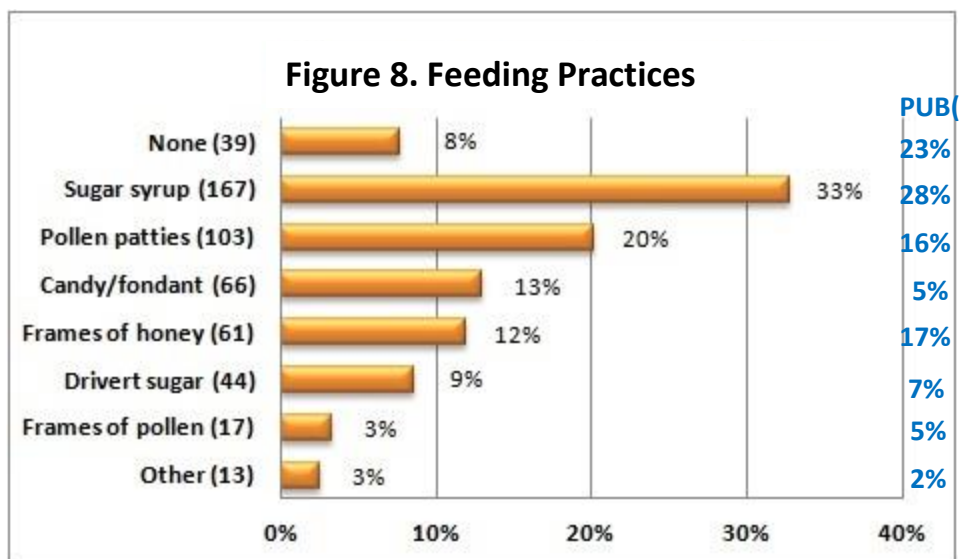
We asked for individuals that had colony loss to estimate what the reason might have been. Multiple responses were permitted. Of 276 statewide responses, 45 chose weak in the fall (16%), 40 selected Varroa mites (15%) and 38 said queen failure (14%). I don't know was also 14%. Of 65 responses by PUB beekeepers, these same choices were the top 4 responses, along with poor wintering. CCD was listed next by PUB members; none of the other choices had more than a couple of selections. Under other, colony freezing, late colony establishment and virus were also included. See Figure 7 - numbers are number of individuals, not percentages.



General hive practices

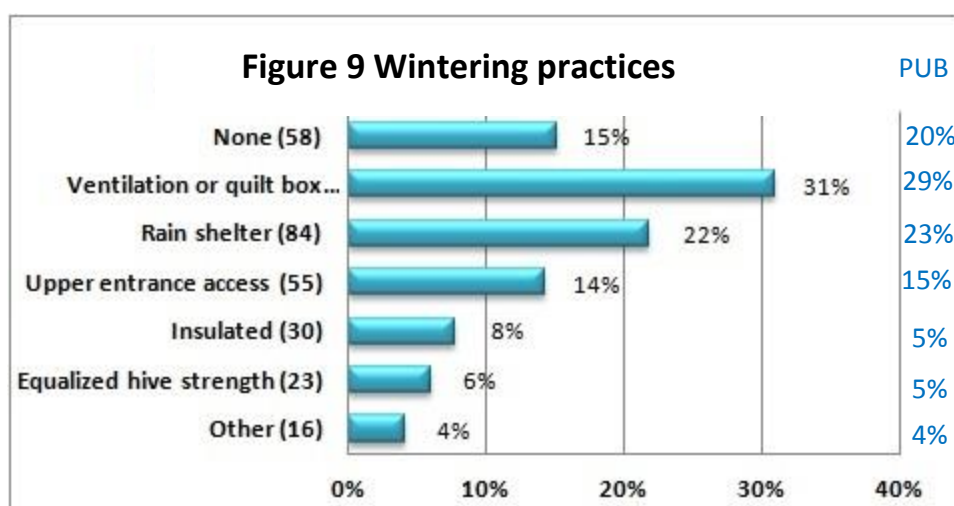
We asked in the survey for information about some managements practiced by respondents. Multiple responses were encouraged.

Feedings: The number of statewide responses (510 total) are shown in bar graph below (Figure 8). Thirty nine individuals (8% of total) did not do any of the options offered. Sugar syrup (33%) and pollen patties feeding (20%) were the most common managements. Feeding fondant/candy (13%) and providing frames of honey (12%) were next most common, with drivert and frames of pollen less commonly fed. Under "other", dry sugar or dry pollen or honey as a liquid were indicated. There were 86 PUB responses, shown as PUB % at right margin, mirror the statewide responses. The response None and sugar syrup feeding were more commonly answered followed by pollen patties and frames of honey. Drivert, fondant and feeding frames of honey were less frequently done by PUB members.

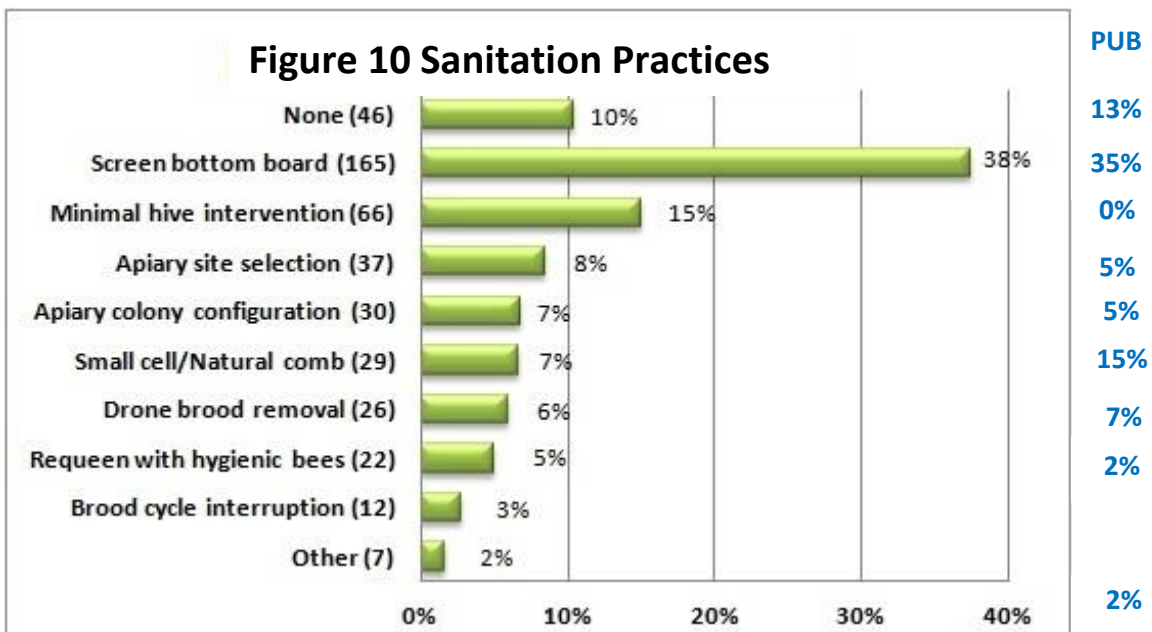


WINTERING PRACTICES: We received 385 responses about wintering management practices statewide and 82 from PUB members (more than one option could be chosen). Fifteen percent (15%) of statewide and 20% of PUB responses (see listing at right [PUB 20%](#)) indicated none of the several listed wintering practices was done. The most common wintering management selected was ventilation/use of a quilt box/lid insulation (31% statewide, 29% for PUB). Use of a rain shelter was next most common (22% statewide, 23% PUB). Providing upper entrance access for bees, equalizing hive strength and insulating lid use were next in use. Under other, providing a sugar cube and moisture control were listed statewide and for PUB, reducing entrance and special insulation a top were mentioned. See Figure 7.

Some choices were not mutually exclusive and this question needs to be revised for a subsequent survey season. Additional items listed statewide included using thicker lumber for box or lid construction or use of lid with moisture trap or special insulated cover. One individual indicated use of a wintering shed, another specified colonies were tilted forward and another a winter wind break.



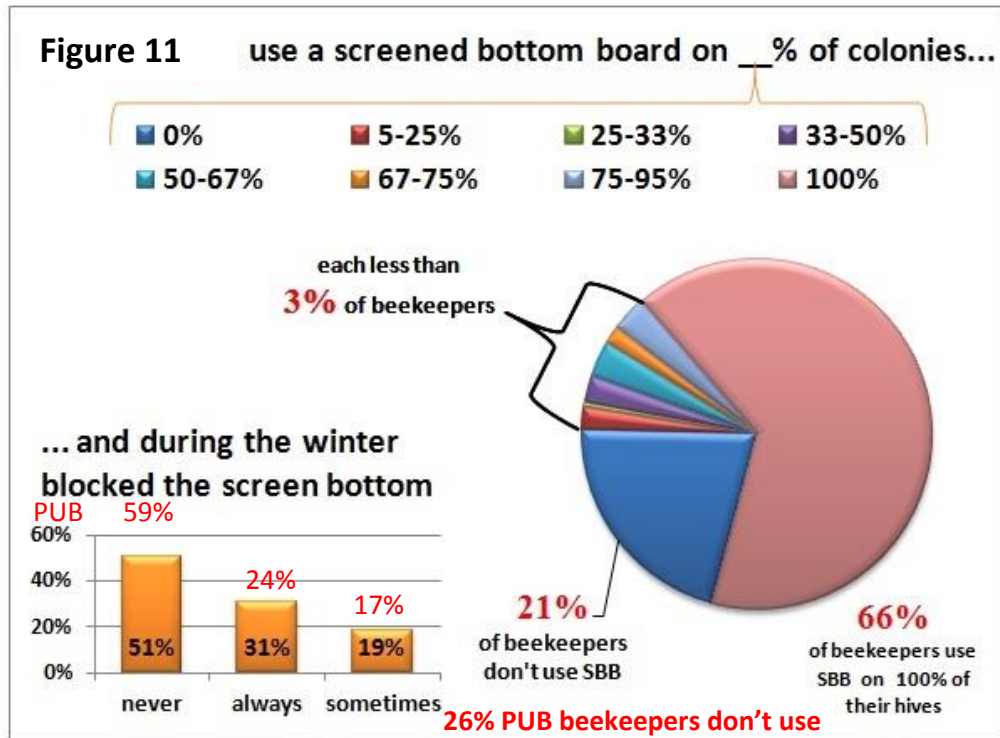
SANITATION PRACTICES: It is critical that we practice some basic sanitation in our bee care. We probably do too little to help insure healthy bees. We received 440 responses for this survey question, 83 from PUB members. Ten percent statewide and 13% of PUB responses said they did not practice any of the 8 offered alternatives. Screen bottom board use (38% statewide and 35% PUB) was the most common option selected – this was encouraging because bees need to get rid of diseased brood, pests and other potential negatives from within their hive. The screen bottom helps promote a “garbage pit” for getting potentially harmful organisms and materials out of the hive. The next most common selection was minimal hive intervention (15% of responses but none indicated this alternative in PUB). Less intervention means less opportunity to compromise sanitation of a hive; needless inspections/manipulations can only interfere with what the bees are doing to stay healthy. As caring bee stewards we should believe we can do our inspections without necessarily compromising bee colony health. Small cell/natural comb was indicted twice as frequently by PUB members compared to the statewide response. See Figure 10 below.



Other sanitation measures listed were cleaning of hive tool between inspections, planting medicinal plants in apiary and replacing/cleaning moldy boxes/frames. What we intend to do is compare individuals who had heavier winter losses with those who did not have losses and their responses to these three categories of feeding, wintering and sanitation.

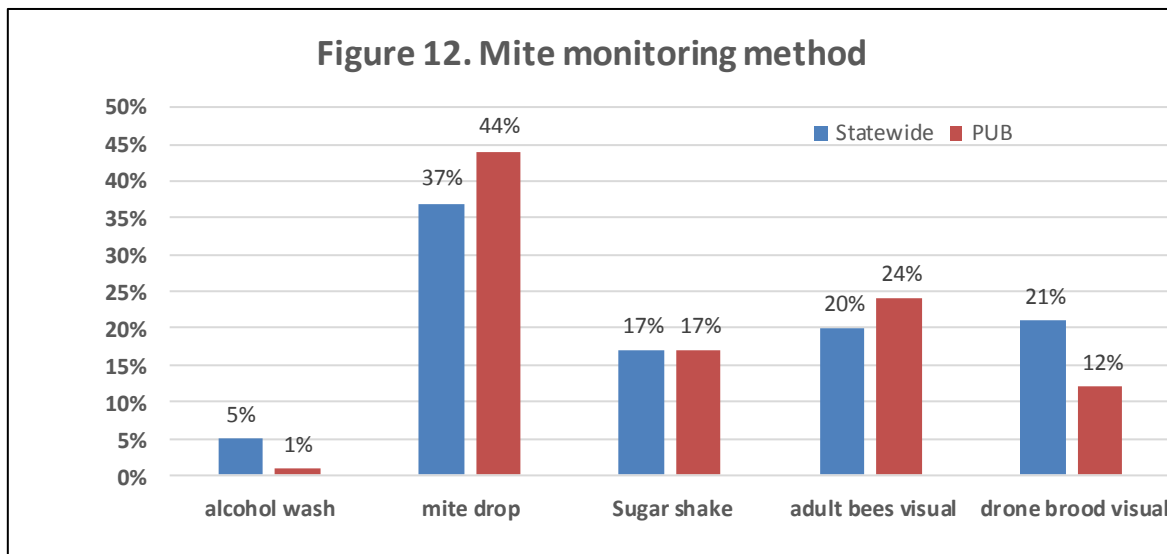
Screen bottom boards: In our national BIP surveys, fully 95% of respondents indicate they have modified colony bottom boards and now use a screen bottom board. We asked what percentage of hives had screen bottom boards and whether they were blocked during the winter. Statewide 21% said they did not use screened bottoms; for PUB members a slightly higher percentage (26%) said they did

not use them. Statewide, 66% used them on all their hives; 74% of PUB members used them full time. The majority statewide (51%) and in PUB (59%) left them open over the winter period (never response). 19% statewide and 17% in PUB sometimes blocked them and 31% statewide and 24% in PUB said they closed them (always response) during the winter.



Mite monitoring/sampling and control management

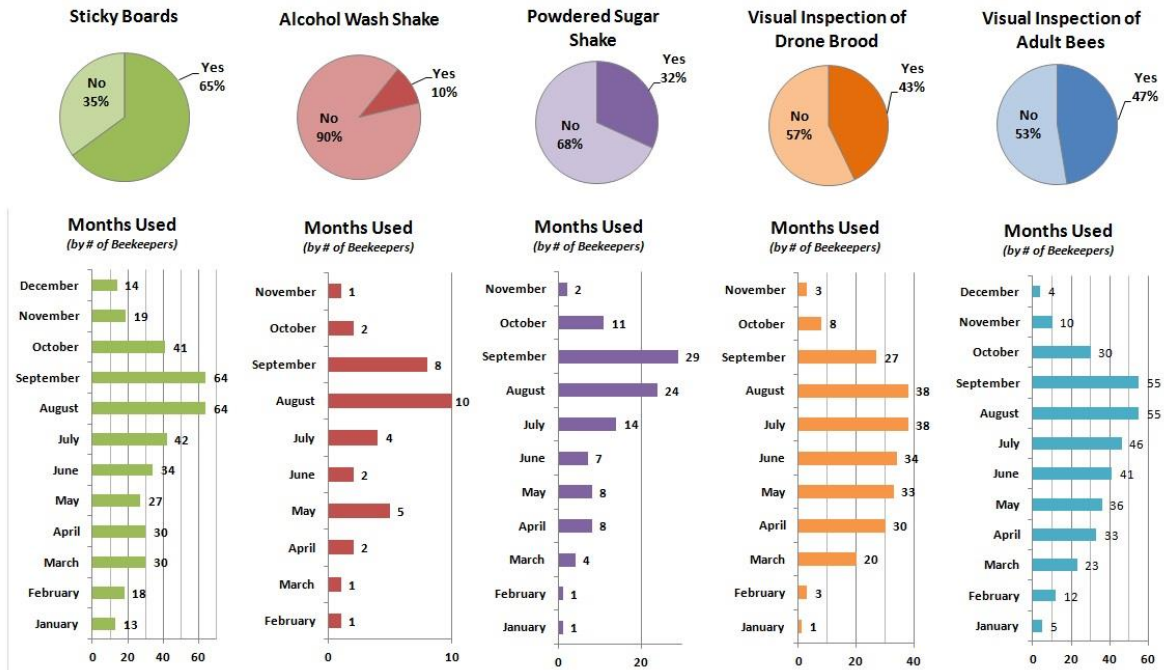
We asked percentage of hives monitored for mites during the 2014 year and/or overwinter, whether sampling was pre- or post-treatment or for both pre- and post-treatment and by which of the 5 possible sampling methods was that tool used. In order of popularity of use, statewide sticky boards was used by



37% (for PUB members 44%), followed by visual inspection of adults then sampling drone brood (for PUB about ½ as frequently used as checking adults. Using powdered sugar to remove mites from adult bees was used by 17% of statewide and PUB members. Figure 12 above. Most sampling was done in August, September and October as might be expected (Figure 13).

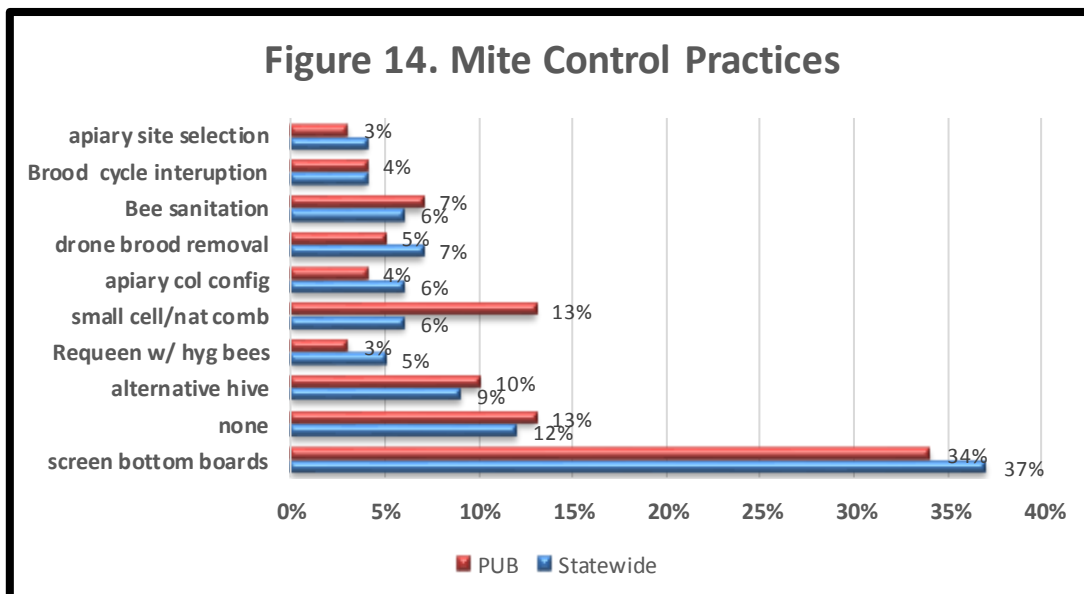
Figure 13

Use and Timing of Mite Monitoring Methods



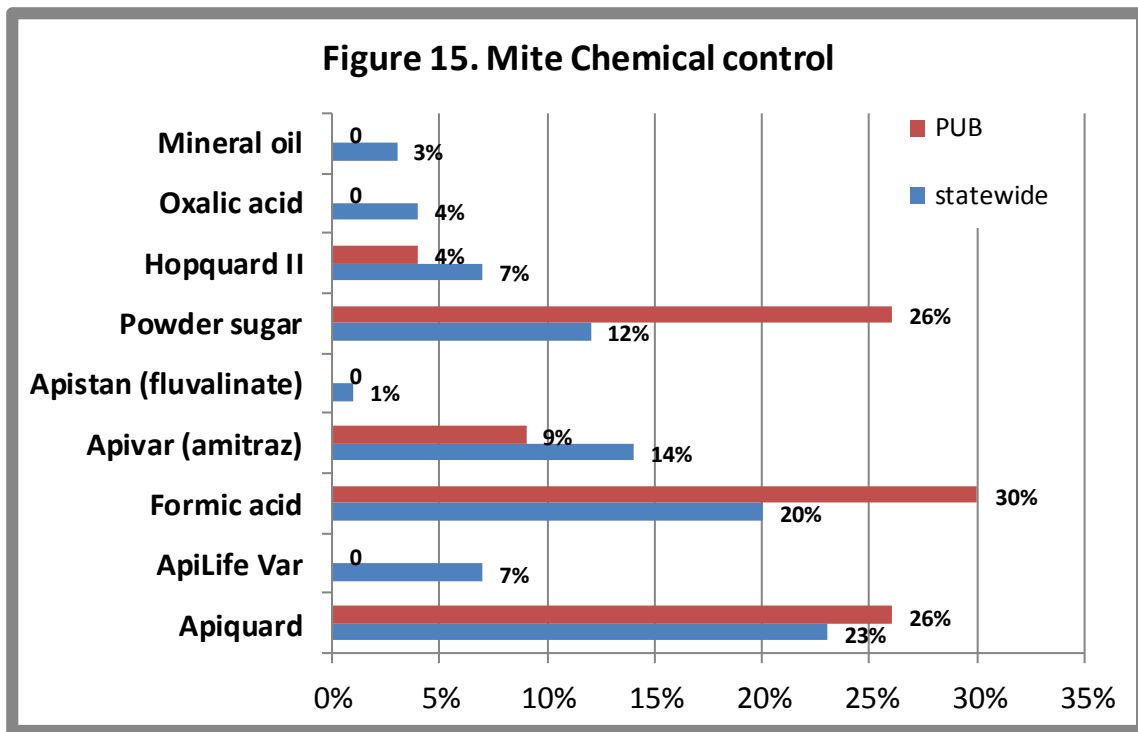
Use of medications and control treatments

Non-Chemical control: We asked about general mite treatments and also about use of chemicals for

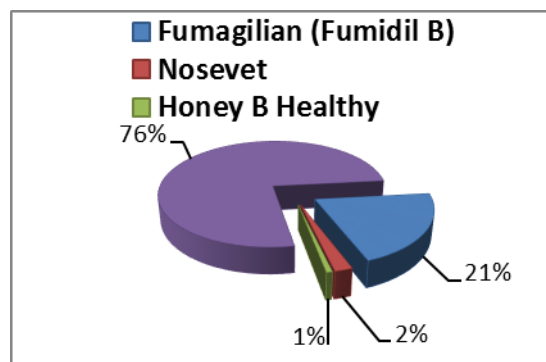


mite control. Under general controls, 12% (49 individuals) statewide and 12 individuals (13%) of PUB respondents said none of the 9 alternatives was used. For the respondents statewide who checked at least one (more than one selection was permitted), use of screened bottom board was listed by 150 individuals (42% of respondents). This was also most frequently indicated technique of PUB member as well with 31 individuals (34%) checking this selection. The only variance between PUB and statewide responses was in Small cell/natural comb (higher in PUB) and two percentage point differences in requeen with hygienic queens, with PUB lower.

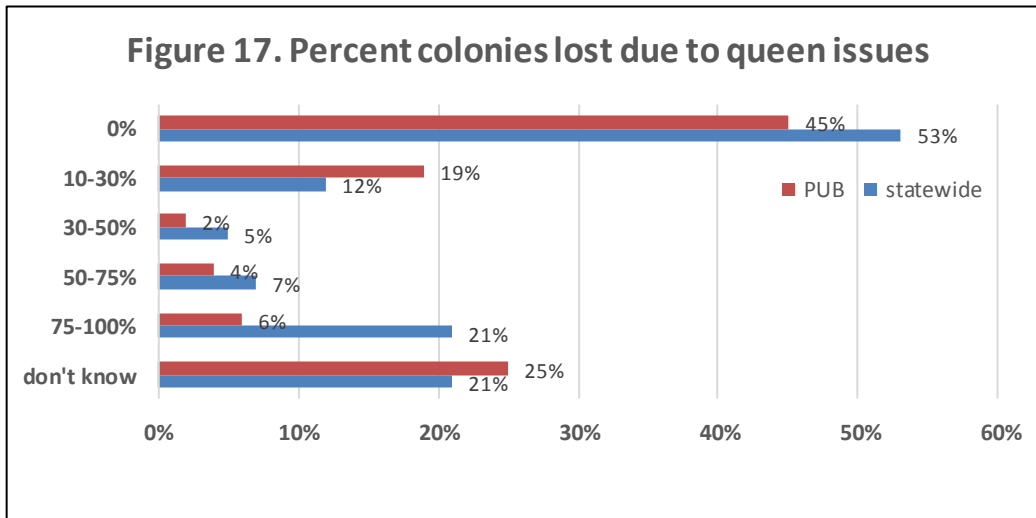
Chemical control: For chemical control there were 210 statewide responses but only 23 from PUB members (multiple choices were permitted). Statewide, Formic acid (MAQS) and the essential oil thymol (Apiguard) were the two top elections, the same as for PUB members but the order was reversed with Formic being utilized by more PUB members than Apiguard. Powdered sugar was used twice as commonly by PUB members compared to statewide respondents. Apivar (amitraz) was used statewide more commonly than by PUB members (14% compared to 9%.) Others as shown in figure 15.



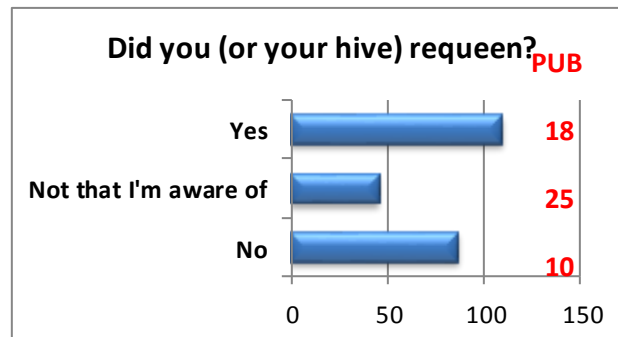
Six individuals of 144 that responded statewide (4%) indicated they treated with terramycin for foulbrood disease, one in PUB. One used Hopguard II. Thirty individuals (21%) indicated use of Fumigillin for Nosema disease control, 2 in PUB. Three in state used Nosevet and one used Honey Bee Healthy.



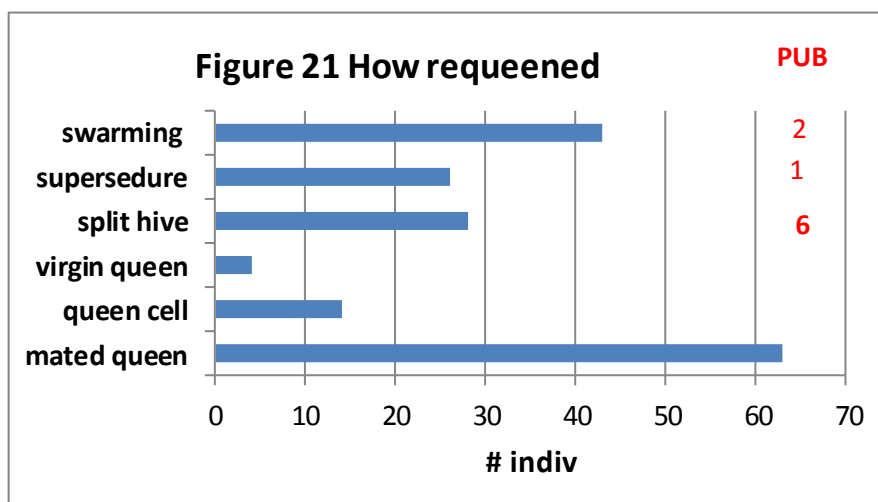
We are not satisfied with our questions about queens on this year's survey. We asked what percentage of your colonies lost do you feel died because of queen problems. The largest response was I don't know (39%) followed by 10-30% at 23%. See Figure 16. PUB responses were similar.



Our subsequent question asked “Did you, or did your hive requeen, in any form during the year”. Of 243 responses, 87 (36%) said no, 46 said ‘Not that they were aware of’ (19%) and 110 (45%) responded yes. PUB responses are shown in red.



One hundred seventy seven individuals responded to the question “If you did requeen, how did you do it.” The largest response was mated queen introduced (34.5% statewide and PUB 37%) followed by colony swarmed statewide (24%) but supersedure for PUB (32%). PUB responses are shown in red. We are not sure how to interpret the responses to these three questions.



Summary

As indicated we will further analyze the loss by managements (feeding/wintering practices/sanitation) as well as losses relative to use of control techniques/chemicals utilized. Some of this information is available on the BeeInformed website (beeinformed.org) and individuals are encouraged to examine that data base as well.

We intend to refine this instrument for another season and hope you will join in response next April. We have a blog on the pnwhoneybeesurvey.com and will respond to any questions/concerns you might have.

Thank You to all PUB Members who participated – if you find any of this information of value please consider adding your voice to the survey in a subsequent season.